

## ON A NEW COCCID PEST OF CACAO FROM TRINIDAD.

By E. ERNEST GREEN, F.E.S., F.Z.S.

***Philephedra theobromae*, nov.**

Adult female broadly oval, convex above. Body soft (not rigidly chitinous as in most LECANIINAE). Colour of examples preserved in alcohol, whitish to brownish ochreous; with two median longitudinal series of small depressed dark spots and transverse series of similar spots radiating from the median series to the margin. Photographs of the insect in alcohol (fig. 1) show the marginal area to be rather closely coated with white pulverulent secretion, with traces of a lamellate marginal fringe of waxy matter; in some examples there are irregular flecks of secretion on the dorsum.

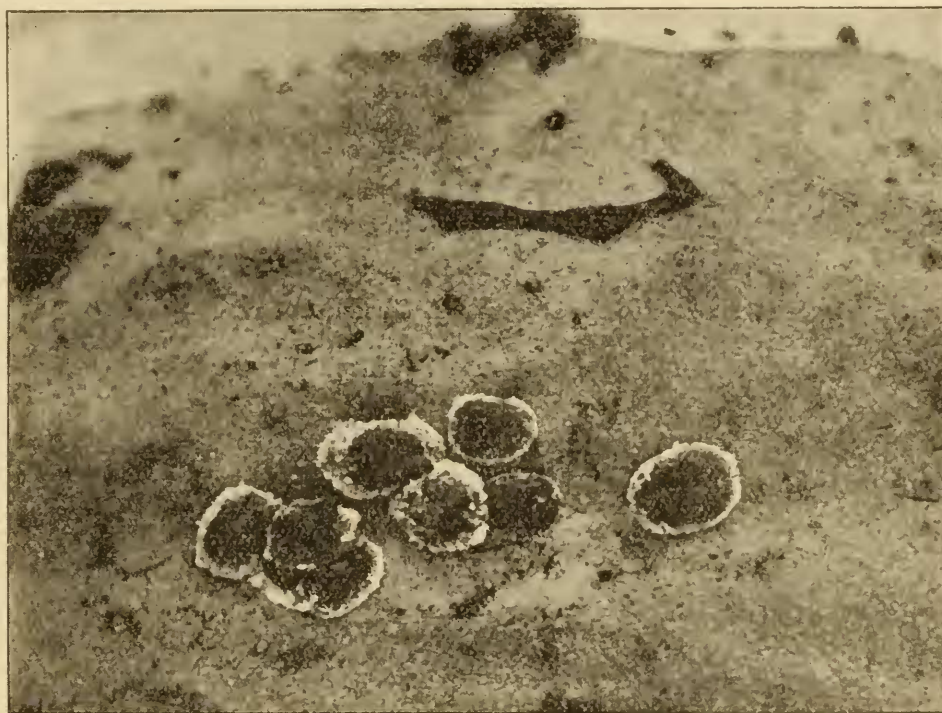


Fig. 1. *Philephedra theobromae*, Green, sp. n., on a cacao pod; photographed in alcohol.  $\times 2.7$ .

In the photograph the body of the insect appears to be dark-coloured. Limbs and antennae rather small in proportion to the size of the insect (fig. 2, *a*). Antenna normally 8-jointed (fig. 2, *b*); occasionally 7-jointed (fig. 2, *c*); in a single example the antenna on one side shows 9 joints, apparently through a duplication of the 5th. The 3rd joint is considerably the longest; the 4th, 5th and 8th are approximately equal; average antennal formula—3, 2, (4, 5, 8), 6, 7; the first joint being of irregular form is invariably distorted by compression and is not included in the formula. Each joint, except the 4th, bears one or more hairs at its distal end, that on the 2nd joint being exceptionally long. Legs small but moderately robust. Tarsus more

(C221)

than half the length of the tibia; strongly bowed, especially on the anterior limbs (fig. 3, *a*). Tibia slightly bowed in the opposite direction to the tarsus. Claw stout and strongly falcate; unguinal digitules moderately dilated, tarsal digitules long and slender. Spiracles proportionately large, with conspicuous trumpet-shaped orifices.

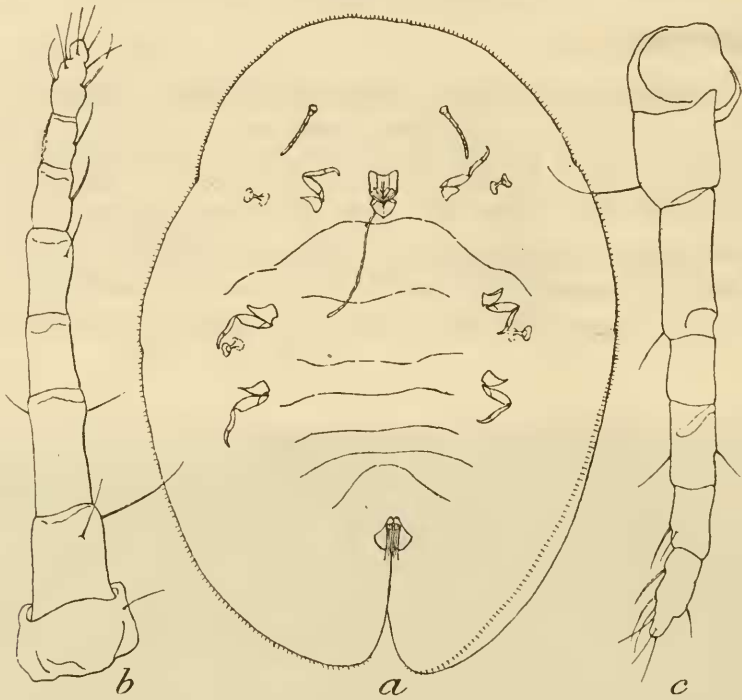


Fig. 2. *Philephedra theobromae*, Green, sp. n.; *a*, adult ♀ under compression,  $\times 20$ ; *b*, antenna, 8-jointed form,  $\times 187$ ; *c*, antenna, 7-jointed form,  $\times 187$ .

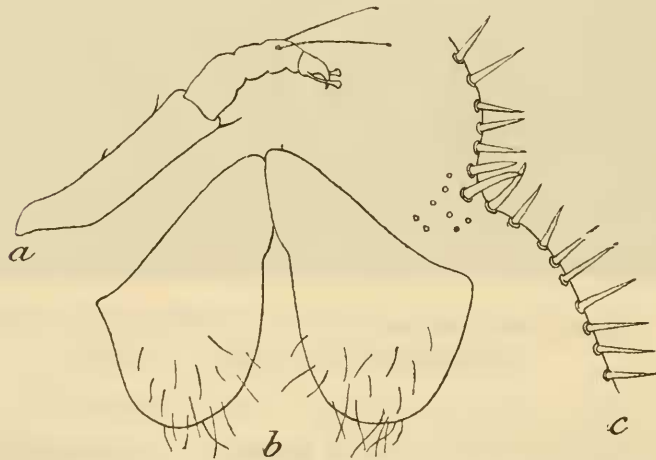


Fig. 3. *Philephedra theobromae*, Green, sp. n.; *a*, foot of anterior limb,  $\times 187$ ; *b*, anal operculum,  $\times 187$ ; *c*, marginal and stigmatic spines of early adult ♀,  $\times 187$ .

Valves of anal operculum with bluntly rounded apices; the base much longer than the outer margin; the apical area with numerous hair-like setae (fig. 3, *b*). Anal ring with eight long and stout setae, and with a pair of rather shorter setae on the outer lip of the invaginated anal pit. Margin of body with a close fringe of sharply pointed

slender spines, of which there are from 25 to 35 between the anterior and posterior stigmatic areas. Stigmatic clefts shallow, scarcely perceptible in old adults, but more clearly defined in the early adult insect. Stigmatic spines 3, only slightly differentiated from those of the marginal fringe (fig. 3, *c*). Length of mature female (under compression) 3.50 to 4.50 mm. Breadth 2.50 to 3.0 mm.

Other stages not observed.

On pods of *Theobroma cacao*; Trinidad, W.I. Collected by Mr. F. W. Ulrich (Entomologist to the Board of Agriculture, Trinidad) who reports that the insects were "enclosed in a carton tent, and were attended by the ant, *Azteca chartifex*."

Cockerell erected the genus *Philephedra* to contain a species from New Mexico that was originally described as *Pulvinaria ephedrae*. He considers the genus to be more nearly related to *Lichtensia* than to *Pulvinaria*, but he has apparently nowhere precisely defined its characters. Those given in his "Table for the Determination of the Genera of Coccidae" (Can. Entom., Nov. 1899, p. 331), viz:—"Body of female soft, not chitinous, pink in front, greenish on dorsum, with some black specks; back with patches of white" can scarcely be regarded as of more than specific value.

I have had no opportunity of examining specimens of *Philephedra ephedrae*; but, relying upon Cockerell's description (Ann. Mag. Nat. Hist., (7) ii, July 1898, p. 24), I feel confident that the Trinidad insect is closely allied to that species. It may indeed eventually prove to be identical. The differences are principally in the antennal formula, and in the absence of longitudinal bands of white secretion on the dorsum. I have no record of the colour of the living insect of *Ph. theobromae*.